

FIG.1

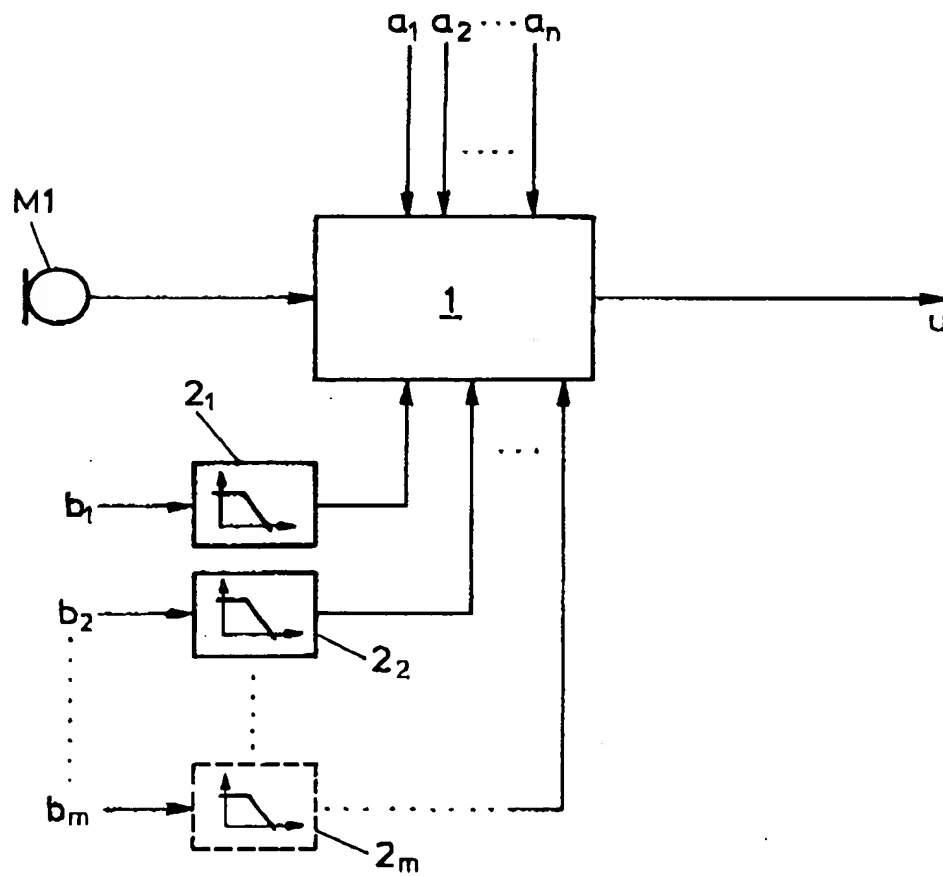


FIG.2

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The diagram shows a control system with the following components and connections:

- Inputs:** A set of inputs  $a_1, a_2, \dots, a_n$  are fed into a block labeled **1**.
- Block 1:** A rectangular block that processes the inputs  $a_i$  and the feedback signal to produce the output  $U$ .
- Output:** The output of block **1** is labeled  $U$ .
- Feedback Path:** The output  $U$  is fed back through a block labeled **3** (a circle with an 'X') and a gain  $k$  to the input of block **1**.
- Disturbance/Reference:** A disturbance or reference signal  $x_{Att}$  is fed into a block labeled **2** (a trapezoidal shape). The output of block **2** is fed into block **1**.
- Motor:** A motor symbol labeled **M1** is connected to the input of block **1**.

The diagram illustrates a fuzzy inference system for a fuzzy controller. It consists of the following components and connections:

- Inputs:** Two inputs,  $a$  and  $\Delta a$ , are provided to the fuzzy inference block.
- Fuzzy Inference Block:** This block contains:
  - A membership function (2) that takes  $a$  as input.
  - A summing junction (16) that adds the output of the membership function to the input  $\Delta a$ .
  - A fuzzy inference rule (12) that takes the output of the summing junction as input.
- Output Calculation:** The output of the fuzzy inference block is multiplied by  $\Delta a$  (14) and then added to  $a$  (15) to produce the final output  $x$ .

FIG. 4